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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/380,106	11/24/1999	KOENRAAD HILAIRE MARIA GOETHALS	DECLE2.001AP	2194

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EXAMINER
PARA, ANNETTE H

ART UNIT	PAPER NUMBER
1661	

DATE MAILED: 06/03/2003

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/380,106	GOETHALS ET AL.	
	Examiner	Art Unit	
	Annette H. Para	1661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,7 and 11-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 7, and 11-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1,2,4,7 and 25 are rejected under 35 U.S.C.102(b) as being anticipated by Roussaux, as previously stated for claims 1, 2, 4, 6, 7 (paper 8, p.2).

Applicants traverse this rejection, arguing that Roussaux does not teach plant micropropagation. Claim 1, c, stated the purpose of this method. It is not a step in the method. The purpose does not matter, because there is no limitation in the claim, which involves the step of micropropagation.

Roussaux inoculated peas with *C.fascians* (page 26). Excised shoots then were placed in culture medium with antibiotic (page 26) as recited in claim 2. Roussaux inoculated *Corynebacterium fascians*, which is the other name for the microorganism Rhodococcus fascians, recited in claims 4 and 25. Once the bacteria were eliminated, shoots grew normally. Roussaux employed seed and different organs as plant material as defined in claim 6. In his study Roussaux used pea, which is a member of the Fabaceae family as recited in claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C.103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art

to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 9, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Roussaux in view of Mantell. Roussaux teaches a method of shoot multiplication using bacteria as discussed above, Roussaux does not teach a method wherein shoots are subjected to acclimatization before conventional growing conditions. Mantell teaches the acclimatization step lacking in Roussaux. It would have been obvious to modify the method of Roussaux by adding the step of plantlets acclimatization as taught by Mantell. One would have been motivated to do so, given the importance of acclimatization of in vitro plantlets as taught by Mantell. One would have expected that the acclimatization step would have emphasized the establishement of the plants in field condition. It would have been obvious to acclimate the plants to conventional growing conditions using methods known in the art, as taught by Mantell. Thus, the invention as a whole was clearly *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claims 17-24, are rejected under 35 U.S.C. § 103(a) as being unpatentable over Roussaux in view of Bhojwani et al. and Mantell

Roussaux teaches a method of shoot multiplication using bacteria as discussed above. Roussaux does not teach a method wherein shoots are subjected to growth limiting conditions after multiplication. Bhojwani et al. teach a method of plant germplasm storage by cryopreservation as well as the advantages of the cryopreservation (p.565). Mantell teaches the acclimatization of plants grown in vitro to greenhouse conditions.

It would have been obvious to modifiy the method of Roussaux by adding a step wherein the plant material is stored under growth limiting condition as taught by Bhojwani et al. One would have been motivated to do so, given the importance of germplasm conservation, as taught by Bhojwani et al. One would have expected that shoots produced by the method of Roussaux could be used for cryopreservation, since they appear to be normal in all respects (p.566). It would have been obvious to acclimate the plants to conventional growing conditions using methods known in the art, as taught by

Mantell. Thus, the invention as a whole was clearly *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Claim Rejections - 35 USC § 112

Enablement

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Nature of the invention: The claims are drawn to method of inducing shoot development/fasciation, by supplying gene products which are proteins. The proteins are believed to be enzymes. These enzymes are unknown according to the specification (p.9).

Scope of the invention: The claims are of very broad scope, several "factors" are claimed and the method applies to any plant species.

Guidance in the specification: The specification does not teach any method involving the fasciation-inducing "factors". The specification does not demonstrate how to produce the proteins in sufficient quantities to practice the method. It does not teaches how to apply the proteins, whether one applies them directly to the plant material, or supplies them in the growth medium. The optimum reaction conditions are not disclosed (temperature, pH, ionic strength). It is not clear if these "factors" will work in a plant tissue culture medium. The specification does not disclose what substrates and cofactors are required for each enzyme. It is unclear if one enzyme is sufficient or if a combination of enzymes is required. There is no guidance in the specification regarding any of these questions.

Working examples in the specification: There is no working example in the specification, which disclose the method using "factors". The working examples disclosed in the specification are limited to the methods using microbes themselves.

State of the prior art: No prior art teaches a method using "factors".

Predictability of the art: It is highly unpredictable. The disclosure does adequately teach how to obtain the proteins. There are so many unanswered questions see above.

Amount of experimentation necessary: The specification provides working example for method using microbes, but not method using "factors". It would require much experimentation for one skilled in the art to develop the claimed method. Applicants have merely suggested a method for plant micropropagation and left all the experimentation necessary to implement the method for others to complete.

Conclusion: The disclosure does not contain sufficient information regarding the subject matter of the claims as to enable one skilled in the art to make and use the claimed invention without undue experimentation. This is particularly true given the state of the prior art, the amount of experimentation necessary, the absence of guidance and working examples in the specification, and the unpredictable nature of the art.

Claims 17-24 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for methods using microbes themselves, does not reasonably provide enablement for methods using "factors". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The specification ~~does not~~ is not enabling for methods using fasciation factors, for the reasons discussed in the rejection above.

Conclusion

No claim is allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Future Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Annette H. Para whose telephone number is (703) 308-6327. The Examiner can normally be reached Monday through Thursday from 6:00 am to 4:30 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Bruce Campell, can be reached on (703) 308-4205. The fax numbers for the group are Before Final (703) 872-9306 and After Final (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application should be directed to the Matrix Customer Service Center whose telephone number is (703) 872-9305.

A.H.P

Bruce Campell

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